Fast Track Trouble shooting

IMPORTANT SAFETY NOTICE – "For Technicians Only" This service data sheet is intended for use by persons having electrical, electronic, and mechanical experience and knowledge at a level generally considered acceptable in the appliance repair trade. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible, nor assume any liability for injury or damage of any kind arising from the use of this data sheet.

Model: DW80H9970US

Publication # DW80H9970 SM - DR
Production Date: 06/07/14 - updated 07/14/14

Support Information:

HELP: 1-888-751-4086 (Tech Sup. – ASC/SSD)
1-866-894-0637 (Tech Sup. - FE/ME)
GSPN: http://gspn3.samsungcsportal.com/main.jsp
PLUS ONE: http://my.plus1solutions.net/clientPortals/samsung

Bulletins:

SERVICE INSPECTION MODE

10 testing sequences available – n1, n2, n3, n4, n5, n6, n7, n8, n9, nA (REF: Page 2)

TO ENTER:

- Press the **AUTO** + **DELICATE** + **POWER** buttons at the **SAME TIME** for **2 SECONDS**
- All LED's are displayed for the first 2 seconds & then the software version is displayed
- Change mode by pressing **NORMAL** button (to advance to next test)
- To activate a test the door must be **CLOSED**

Information Codes (REF: Diagnosis on page 3)

Code	When occur
4E	- When the number of detected water supply pulses is less than 10 within 20 seconds after water is supplied. - When the number of detected water supply pulses is less than 100 within 80 seconds after water is supplied. - When the target water level is not reached within 5 minutes after water is supplied.
5E	- In case the power of the drain pump power exceed 20W in the operation of the Drain pump even if it operates with 3 times.
PE	- When the location is not detected for 2 minutes after the synchronous motor operation. (In Test Mode, when the location is not detected for 1 minute.) - In the cleaning section, when the location is not detected for 3 minutes.
tE	- When the temperature sensor data output is equal to or greater than approximately 4.5V or is equal to or less than approximately 0.2V - When the water temperature is detected as equal to or less than - 3oC for 30 seconds in succession during the cleaning the heater operation.
HE-1	- The start temperature is saved 30 seconds after heating starts. Thereafter, if the temperature change is equal to or less than 4℃ for 10 minutes, the heater relay is turned off for 1 second and then restarts heating. Then, if the temperature change is equal to or less than 4oC for 10 minutes again, an HE-1 error occurs.
HE	- When the temperature is measured as equal to or greater than 80℃ for 3 seconds.

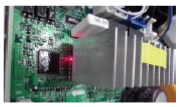
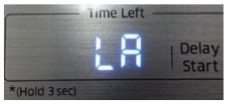
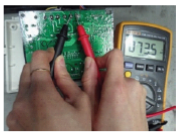
Code	When occur
bE2	- When the button is pressed and held for 30 continuous seconds or longer.
bE3	- When IC communications between the Sub PBA and the touch button fails.
AE	- When communications between the main PBA and the sub PBA fails for 24 seconds. (In Test Mode, communication fails for 6 seconds.)
AE6	- When the response is not received from inverter PBA for 3 seconds, Inverter RELAY OFF for 2 minutes. After repeated 3 times, display the error code
LE	- When the water leakage sensor data is equal to or less than 3V for 3 seconds.
OE	- When the overflow sensor data is equal to or less than 3V for 5 seconds.
1E	**Case1) HPS detected water level** • Condition 1) - When the high pressure switch (HPS) does not measure a high level after the completion of the water supply. • Condition 2) 2-1) If the high pressure switch measures a low level for 3 continuous seconds while a wash is performed, the HPS is checked again. If a high level is detected, a normal operation is performed. If this is repeated 5 times, an 1E error occurs. 2–2) If the high pressure switch measures a low level for 3 continuous seconds while a wash is performed, the HPS is checked again. If a low level is detected, additional water is supplied for a predetermined period of time. If a low level is measured even after additional water is supplied twice, an 1E error occurs. **Case2) power consumption of Circulation pump detected low water level**

Code	When occur
3E	• **Condition 1**) - When Main receives the Circulation pump error from the inverter, stop the drive the motor and restart again. If Main receive the motor error 11 times, turn off the motor for 5 minutes. At the third rest time, Error occurs. (When an error occurs, Heater is stopped immediately. And Heater ON after operating the circulating motor 10 seconds.) • **Condition 2)** - Washing(Rinsing) area : When Target rpm is 2600rpm or more and Circulation pump speed is 2400rpm or less continuously for three seconds, the operation is stopped. Retry 2 times in 3 seconds. When sensing 3 times, Inverter is turned off and retry in 5 minutes. At the third rest time, Error occurs. (If the condition of Low level water sensing, this error is ignored.)
4E5	- When the number of detected water supply pulses are 200 at the Non-water supply mode. → Repeats water valve on(1seconds) / off(1seconds) 2 times
9E1	If blackout or DC Link voltage is high or low voltage conditions, switches to stop mode (abnormal voltage).
7E	Case1) When the reset position sensing for 10 seconds, vane motor 1 sec Off and re-operation. Error occurs after retry three times Case2) When the reset position sensing for 25 seconds. Error occurs after retry three times Case3) Vane position is the time from initial position to initial position in 21 seconds or less, the error occurs.

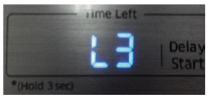
SERVICE INSPECTION MODE

Item	Related Parts	Symptoms	Description
Entering Test Mode			- Press the Auto Key, Delicate Key and Power keys at the same time to enter Test Mode.
Changing the mode	• Display LED		- Press the Auto key to change the mode: All Led Display → Version Display → n1 → n2 → n3 → n4 → n5 → n6 → n7 → n8 → n9 → nA …(Repeats)) - If the mode is changed, it automatically starts. However, if the door is open, it does not start automatically and a "dE" error occurs.
Displaying all	• Display LED		- If the product enters Test Mode, all product displays are turned on for 1 second. - If no key is pressed, the version is displayed.
Displaying the program version	• Version		- Default is to Display the Main Version. - Version Key is pressed, the corresponding information is displayed. 1) Normal KEY : Sub Version 2) Heavy Key : Model Option 3) Delicates Key : Inverter SW Version 4) Quick Key : SUB Touch IC SW Version - Dry+ Key while pressing, dry default option can be set.
N1 (nA)	• Drain pump • Inlet Valve • Flow Meter • Water Level Sensor • Turbidity	Water supply Error Turbidity Error	- "nA" is displayed. - Drain 30 seconds - Water supply 4liters - If water supply is not complete, occurs 4E error - Turbidity sensor detect after water supply finished. - Displays the "tu" and voltage data of turbidity alternately. (ex. 3.2V → 32) - If reference voltage can not be reached after sensing the turbidity(10 seconds), occurs E3 error
n2 (nb)	• Circulation Motor	A nozzle does not inject water.	- Runs the circulation motor (BLDC: 3400 RPM, AC motor: High). - If the normal water level is detected, "nb" is displayed. If the low water level is detected, "n2" is displayed - The "lower all" runs for 1 minutes -> the "Middle up" runs for 1 minutes, change the order of operation.
n3 (nC)	• Circulation Motor	A nozzle does not inject water.	- Runs the circulation motor(BLDC: 2600 RPM, AC motor: Low). - If the normal water level is detected, "nC" is displayed. If the low water level is detected, "n3" is displayed. - The "lower all" runs for 1 minutes → the "Middle up" runs for 1 minutes, change the order of operation..
n4(nd)	• Circulation Motor • Heater • Thermistor • Dispenser	Heater Error	- Circulation motor (BLDC : 3400 RPM, AC motor : LOW) runs. - Heater is On after pump has been running for 10 seconds, when the normal water level is detected. - If the low water level is detected, Heater off - If the heater runs for 3 minutes, the heater is automatically turned off. - If the temperature is equal to or higher than 60℃, the heater is turned off. - When starting, the dispenser runs for 1 minute. - The lower all runs for 3 minutes → The middle up run for 3 minutes
n5	• Distributor Motor	Distributor function Error	- The circulation motor runs (BLDC: 2600 RPM). - RPM display after operation circulation motor. - Each time press the Normal key, it is possible to change the rpm. (1200 ~ 3400rpm) - Each time press the Heavy key, it is possible to change position of distributer. (1:Middle + Upper → 2:Lower Right→ 3:Lower All → 4:Lower Left)
n6	• Distributor Motor	Distributor function Error	- The circulation motor runs (BLDC: 3400 RPM, AC motor: High). - The synchronous motor runs by alternating the location between lower right and lower left at 1 minute intervals.
n7	• Dry Fan Motor • Turbidity	The Dry Fan motor does not work.	- Runs the vent motor and the thermal actuator of the dryer unit. - Turbidity sensor detect turbidity data. - Turbidity data displayed. - If reference voltage can not be reached after sensing, occurs E3 error
n8	• Inlet valve • Overflow Sensor	Over level water Error	- Water is supplied until an overflow is detected. - If an overflow is detected, "oF" is displayed.
n9	• Drain Pump	Drain Error	- Runs the drain pump for 60 seconds (25 seconds on / 2 seconds off). - If drain is not complete(Measuring power consumption drainage), occurs 5E error - When drain is complete, display nP
nA	• Inlet Valve • Circulation Motor • Dry Fan Motor • Drain Pump • Heater • Half Load Motor		1. Lower Key : Lower Led On Dry Fan(Auto LED) → Dry Actuator(Normal LED) → Dispenser Actuator(Heavy LED) → Off 2. Booster left Key : Booster left LED On Drain pump (Auto LED) → Circulation Motor(low) / BLDC motor (Normal LED) → Circulation Motor(low) / BLDC motor (Heavy LED) → Off Circulation Pump Runs Max. 3 seconds to prevent damage c-pump. 3. Booster Right Key : Booster Right LED On Distributer motor(Auto LED) → Valve water (Normal LED) → Heater(Max.operating 2seconds) (Heavy LED) → Vane CW (Delicate LED)→ Vane CCW (Express LED) → Off

TROUBLE SHOOTING – FAULT CODES

Error Type	Error mode	Checking method	Corrective actions
Water supply error	4E 4E-1	1. Check whether the faucet is open.	- Open the faucet.
		2. Check whether the water supply has been cut off.	- After wait until the water supply resumes and turn off the power. After the water supply resumes, turn on the power.
		3. Check whether any foreign material is in the Water Supply Line and the Water Valve filter.	- Remove the foreign material, clean the filter in Water Valve with a brush.
		4. Check the connection for the Water Valve connector.	- Reconnect the Water Valve connector.
		5. Check whether the coil in Water Valve is conductive. (Remove the connector before measuring.) • Normal: Approx. 990Ω ± 10% (890Ω~1089Ω)	- Faulty: Replace the Water Valve.
		6. Check whether the water supply stops, after water is supplied for 20 seconds.	- Faulty: Replace the Water Valve and Flow Meter.
		7. Check whether the water supply stops after water is supplied for 80seconds or 5 minutes.	- Check the water supply pressure. (> 0.5bar) - Faulty: Replace the Water Valve and Flow Meter.
		8. Check whether the Water Valve is operating normally in the Main PBA. - Check the Water Valve Relay in Main PBA. : Check the voltage between the Black wire (Number 9) of the CN202 and the Black wire of the CN101 connector. · Normal: 110 ~120V (while operating)	- Faulty: Replace the Main PBA assy. - Normal: Replace the Water Valve
		9. Check the Power Relay.	- See the "Power Relay error".
Drain error	5E	1. Check whether there is any foreign material in the Drain Hose and Drain Pump.	- Remove the foreign material in the Drain Hose and Drain Pump.
		2. Check the connections for the Drain Pump connector.	- Reconnect the Drain Pump connector.
		3. Check whether the Drain Pump coil is conductive. (Remove the connector before measuring.) : Approx. 88Ω ±7% (81.8~84.2)	- Faulty: Replace the Drain Pump.
		4. Check the operation of the Inverter PBA	
		4-1. Check the operating AC voltage of the Inverter PBA CN5 connector · Normal: 110V ~ 120V (while operating)	- Faulty: Replace the Main PBA assy
		4-2. Check the operating LED(red) of the inverter PBA · Normal: Fully turn-on (while operating)	- Faulty: Replace the Inverter PBA assy. 
		4-3. Check the operating voltage between #1 and #2 of the Inverter PBA CN8 connector at LA in test mode · Normal:50V ~ 90V (while operating) · How to do LA in test mode - Push Booster left key+Booster right key+Power key at the same time - Push the Linear Auto key All Led Display → Version Display → At → nT → L2 : Ft → L3(Lc) → L4(Ld) → L5(Hd) → L6 → L7 → L8 → L9 → LA → Lb→ Version Display → (repeated)	- Faulty: Replace the Inverter PBA assy. - Normal: Check a connection between the Inverter PBA and the Drain Pump.  
Key input error	bE-2 bE-3	Check whether there is condensation on the PBA. - CN103 of Display Control Module connector - CON100 TOUCH Module connector · Normal: No condensation	- Faulty : Remove any condensation and moisture. - Normal : Replace the Control Panel assy. (Display Control Module, Touch Module, Sub Wire)

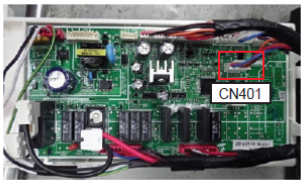
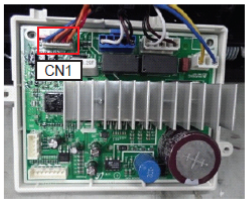
TROUBLE SHOOTING – FAULT CODES

Error Type	Error mode	Checking method	Corrective actions
Circulation Pump error	3E	1. Check whether there is any foreign material in the Circulation Hose and Circulation Pump.	- Remove the foreign material in the Circulation Hose and Circulation Pump.
		2. Check the connections for the Circulation Pump connector.	- Reconnect the Circulation Pump connector.
		3. Check whether the Circulation Pump coil is conductive. (Remove the connector before measuring.) · Normal : Approx. 5.8Ω ±10%	- Faulty: Replace the Circulation Pump.
		4. Check the operation of the Inverter PBA	
		4-1. Check the operating AC voltage of the Inverter PBA CN5 connector · Normal : 110V ~ 120V (while operating)	- Faulty: Replace the Main PBA assy
		4-2. Check the operating LED(red) of the inverter PBA · Normal : Fully turn-on (while operating)	- Faulty: Replace the Inverter PBA assy.
		4-3. Check the operating voltage between #1 and #2 of the Inverter PBA CN6 connector at L3(Lc) in test mode · Normal : 50V ~ 90V (while operating) · How to do L3(Lc) in test mode - Push Booster left key+Booster right key+Power key at the same time - Push the Linear Auto key All Led Display → Version Display → At → nT → L2 : Ft → L3(Lc) → L4(Ld) → L5(Hd) → L6 → L7 → L8 → L9 → LA → Lb→ Version Display → (repeated)	- Faulty: Replace the Inverter PBA assy. - Normal: Check a connection between the Inverter PBA and the Circulation Pump. 
Heater error	HE-1	1. Check the connections of the Heater connectors.	- Reconnect the Heater connectors.
		2. Check the resistance between both ends of the Heater. : Check the resistance between both ends of the Heater directly, or check the resistance between the red wire of the Heater Relay and the black and yellow wires of the Power Relay, respectively. · Normal : Approx. 12.14 ~ 14.16Ω ·. Check after disconnect circuit breaker or power cable.	- Faulty: Replace the Heater.
		3. Check the connections of the Heater Relay in Main PBA. : Check the voltage between the Red wire of the Heater Relay on the base and the Black wire of the CN101 connector. · Normal : 110 ~ 120V (while operating)	- Reconnect the Heater Relay connectors.
		4. Check the driving signals for the Heater Relay. Measure the voltage between pin 1(D12 Anode side) of the Main PBA RY201 relay and pin 2 of the CN402 connector. · When the Heater is off : 10.5 to 13V · When the Heater is operating : < 0.5V	- Faulty: Replace the Main PBA assy.
		5. Check the Power Relay.	- See the "Power Relay error".
Heater Overheat error	HE	1. Check the operation of the Thermistor.	- See the "tE Error".
		2. Check the Heater Relay.	- See the "HE-1 Error".
Leakage error	LE	Check whether there is any trace of water leakage in the shutter. · Normal: No water leakage trace	- Faulty: Check the leakage location. - Replace the faulty part.

TROUBLE SHOOTING – FAULT CODES

Error Type	Error mode	Checking method	Corrective actions
Half load error	PE	1. Check the connections for the Distributor Motor and Micro Switch connectors.	- Reconnect the Distributor Motor and Micro Switch connectors.
		2. Check whether the coil in Distributor Motor is conductive. : Remove the connectors before measuring. · Normal: Approx. 3.6 ~ 4.0kΩ	- Faulty: Replace the Distributor Motor.
		3. Check the position sensing operations when turning the Micro Switch on and off.(Use n5 Service test mode.) Check the conduction between the brown wire and the Violet wire. · Micro switch On: Short · Micro switch Off: Open - Micro Switch sign alters in ON/OFF state. - It is NG if keep in ON or OFF state for 120 seconds. * Do not supply with water and test.	- Faulty: Replace the Micro Switch for sensing positions. - Normal: Replace the valve distributor and CAM switch.
		4. Adjust Cam A'ssy and Find the faulty.	- Faulty: Replace Cam A'ssy.
		5. Check whether half load is operating normally. - Check the half load operation · Normal : 110 ~ 120V - Check the operation of Distributor Motor Relay. : Check the operating voltage between the 3pin(Brown) wire of the Main PBA CN201 connector and the 1pin(Black) wire of the Main PBA CN101 connector · Normal : 110 ~ 120V (while operating)	- Faulty: Replace the Main PBA assy.
		6. Check the Power Relay.	- See the "Power Relay error".
Motor vane error	7E	1. Check the connections for the Motor vane and Sensor vane connectors.	- Reconnect the Distributor Motor and Micro Switch connectors.
		2. Check whether the coil in Motor vane is conductive. Check the resistance between the Red and Black wire(CCW) Check the resistance between the White and Black wire(CW). : Remove the connectors before measuring. · Normal: Approx. 1.625 ~ 1.796kΩ	- Faulty: Replace the Motor vane.
		3. Check the position sensing operations when moving the Sensor vane on and off.(Use n5 Service test mode.) Check the conduction between the Brown wire and the Black wire. · Sensor On: 0V · Sensor Off: 5V	- Faulty: Replace the Sensor vane for sensing positions. - Normal: Replace the Motor vane and Sensor vane
		4. Adjust Motion A'ssy and Find the faulty.	- Faulty: Replace Motion A'ssy.
		5. Check whether Motor vane is operating normally. - Check the Motor vane operation · Normal: 110 ~ 120V - Check the operation of Motor vane Relay. - CCW: Check the operating voltage between the 5pin(Red) wire of the Main PBA CN202 connector and the Black wire of the Main PBA CN101 connector CW: Check the operating voltage between the 5pin(White) wire of the Main PBA CN202 connector and the Black wire of the Main PBA CN101 connector · Normal: 110 ~ 120V (while operating)	- Faulty: Replace the Main PBA assy.
		6. Check the Power Relay.	- See the "Power Relay error".

TROUBLE SHOOTING – FAULT CODES

<table>
<tr><th>Error Type</th><th>Error mode</th><th>Checking method</th><th>Corrective actions</th></tr>
<tr><td rowspan="4">Overflow error</td><td rowspan="4">OE</td><td>1. Check the connections for the Overflow Sensor connector.</td><td>- Reconnect the Overflow Sensor connector.</td></tr>
<tr><td>2. Check whether the Water Valve operates normally. Use d07 Display mode.</td><td>- See “4E Error”.</td></tr>
<tr><td>3. Check whether water is supplied (even small amounts) in the intervals when the Water Valve is not operating.</td><td>- Remove foreign material from the Water Valve.
- If you cannot remove the foreign material from the Water Valve, replace it.</td></tr>
<tr><td>4. Error occurrence after confirm Method 1,2,3.</td><td>- Assy Case Brake replace.</td></tr>
<tr><td rowspan="2">Thermistor Error</td><td rowspan="2">tE</td><td>1. Check the connections for the Thermistor connector</td><td>- Reconnect the Thermistor connector.</td></tr>
<tr><td>2. Check whether the Thermistor is operating normally.
- Measure the voltage between both ends of the Thermistor.
· Normal: 0.05 to 4.95V
- Measure the resistance between both ends of the Thermistor
: Remove the connector before measuring.
(See the Table right.)
<table><tr><th colspan="2">Thermistor table</th></tr><tr><th>Temp(℃)</th><th>Resistance(kΩ)</th></tr><tr><td>5</td><td>125.814</td></tr><tr><td>10</td><td>98.360</td></tr><tr><td>15</td><td>77.480</td></tr><tr><td>20</td><td>61.477</td></tr><tr><td>25</td><td>49.120</td></tr><tr><td>30</td><td>39.510</td></tr><tr><td>35</td><td>31.985</td></tr><tr><td>40</td><td>26.053</td></tr><tr><td>45</td><td>21.347</td></tr><tr><td>50</td><td>17.590</td></tr><tr><td>55</td><td>14.573</td></tr><tr><td>60</td><td>12.136</td></tr><tr><td>65</td><td>10.157</td></tr><tr><td>70</td><td>8.541</td></tr></table></td><td>- Faulty: Replace the Thermistor.
- Normal: Replace the Main PBA assy
 </td></tr>
<tr><td rowspan="4">Main-Sub PBA Communication error</td><td rowspan="4">AE</td><td>1. Check the connections between MAIN PBA CN402 connector and Display Control Module CN101 connector</td><td>- Reconnect the MAIN PBA CN402 connector and SUB PBA CN101 connector</td></tr>
<tr><td>2. That Error is produced continuously after method 1 confirmation.</td><td>- Replace: Sub-Wire</td></tr>
<tr><td>3. That Error is produced continuously after method 2 confirmation.</td><td>- Replace: Sub-PBA</td></tr>
<tr><td>4. That Error is produced continuously after method 2 confirmation.</td><td>- Replace: Main-PBA</td></tr>
<tr><td rowspan="4">Motor BLDC error</td><td rowspan="4">1E</td><td>1. Check the connections for the Pump BLDC connectors.</td><td>- Reconnect the Pump BLDC connectors</td></tr>
<tr><td>2. Error occurrence after confirm Method 1.</td><td>- Faulty: Replace high pressure sensor(HPS)</td></tr>
<tr><td>3. Do it to act Test service test mode L2, L3 and motor(water) sound confirmation in L3</td><td>- Faulty: Replace motor</td></tr>
<tr><td>4. Problem occurrence to Method 1,2,3.</td><td>- Faulty : Replace Main-PBA.</td></tr>
<tr><td rowspan="3">BLDC Motor Communication error</td><td rowspan="3">AE6</td><td>1. Check the connections between Main PBA CN401 connector and Inverter PBA CN1 connector</td><td>- Reconnect the Main PBA CN401 connector and Inverter PBA CN1 connector
   </td></tr>
<tr><td>2. That Error is produced continuously after method 1 confirmation.</td><td>- Replace: Inverter PBA</td></tr>
<tr><td>3. That Error is produced continuously after method 2 confirmation.</td><td>- Replace: Main PBA</td></tr>
</table>

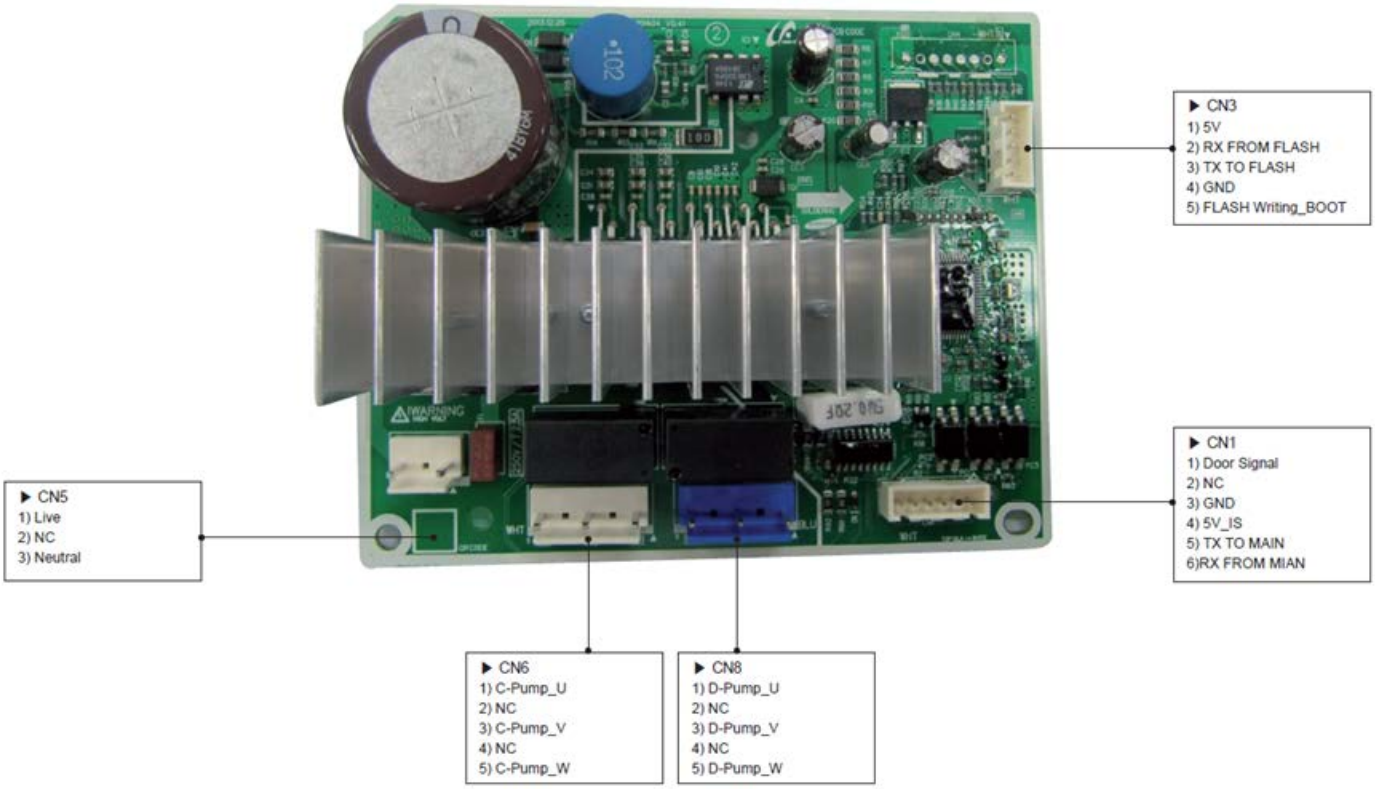
TROUBLE SHOOTING – FAULT CODES

Error Type	Error mode	Checking method	Corrective actions
No Power error	None	1. Check the connections for the power plug.	- Reconnect the power plug.
		2. Check the voltage of the power outlet. · Normal : 120V	- Connect to a 120V power source.
		3. Check Power Key on state.	- Try to touch the Power key.
		4. Check the connections for the Sub PBA and Touch PBA connector parts.	- Reconnect the Sub PBA and Touch PBA connectors.
		5. Check the connection of the Main PBA connector CN101	- Reconnect CN101
		6. Check the connections for the Sub PBA and Main PBA connector parts and	- Reconnect the Sub PBA and Main PBA connectors.
		7. Check whether there is condensation on the PBA. - CN103 of Display Control Module connector - CON100 TOUCH Module connector · Normal: No condensation	- Faulty: Remove any condensation and moisture. - Normal: Replace the Control Panel assy.
		8. Check whether the fuse is broken.	- Replace the fuse (15A).
		9. Check the DC voltage of the Main PBA.	- See "Main PBA DC voltage error".
		10. Check the wires of the Main PBA power part. - Measure the voltage between the pin 1 wire and the pin 3 wire of CN101. · Nomral: AC 120V	- Faulty: Check and replace the wires of the power part.
		11. In case of is No Power after Method 1~10 action	- Replace the Control Panel assy. (Sub, Touch, wire)
		12. In case of is No Power after Method 1~11 action	- Replace the Main PBA.
Display error	None	1. Check the connections for the Display LED connector part.	- Reconnect the connectors for Display LED.
		2. Check the Display LED.	- Faulty: Replace the Display LED and Sub PBA.
Dry error	None	1. Check the wire connections for the Fan Motor.	- Reconnect the Fan Motor connectors.
		2. Check the resistance of the Fan Motor coil. (Remove the connector before measuring.) · Normal: Approx. 50.4 ~ 61.6 Ω	- Faulty: Replace the Fan Motor assy.
		3. Check the operation of the Fan Motor Relay : Check the operating voltage between the red wire of the CN201 connector and the Black wire of the CN101 connector. · Normal: 110V ~ 120V (while operating)	- Faulty: Replace the Main PBA assy.
		4. After Method 1~3, if dry performance is bad.	- Faulty : Replace the Dry duct replace.

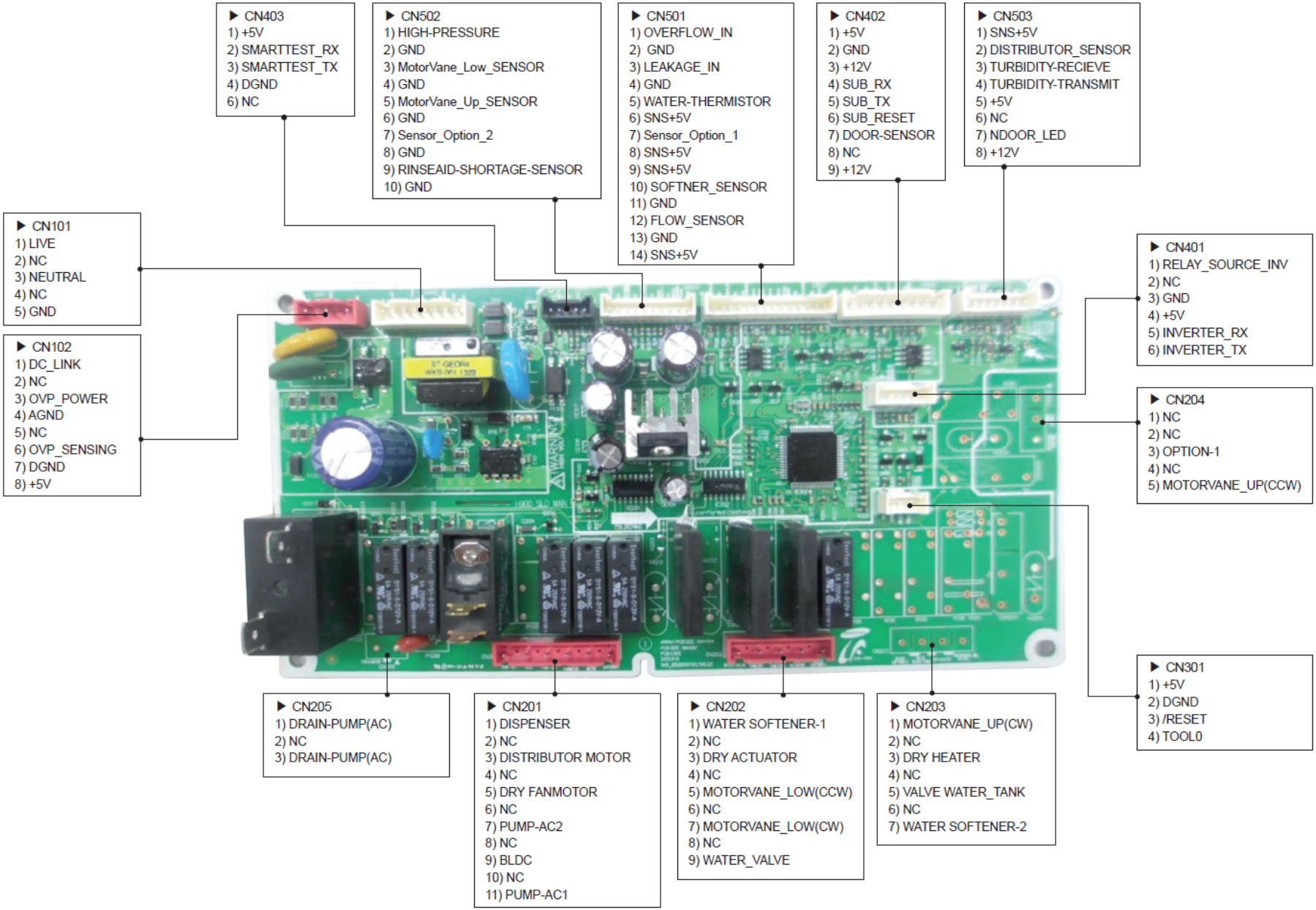
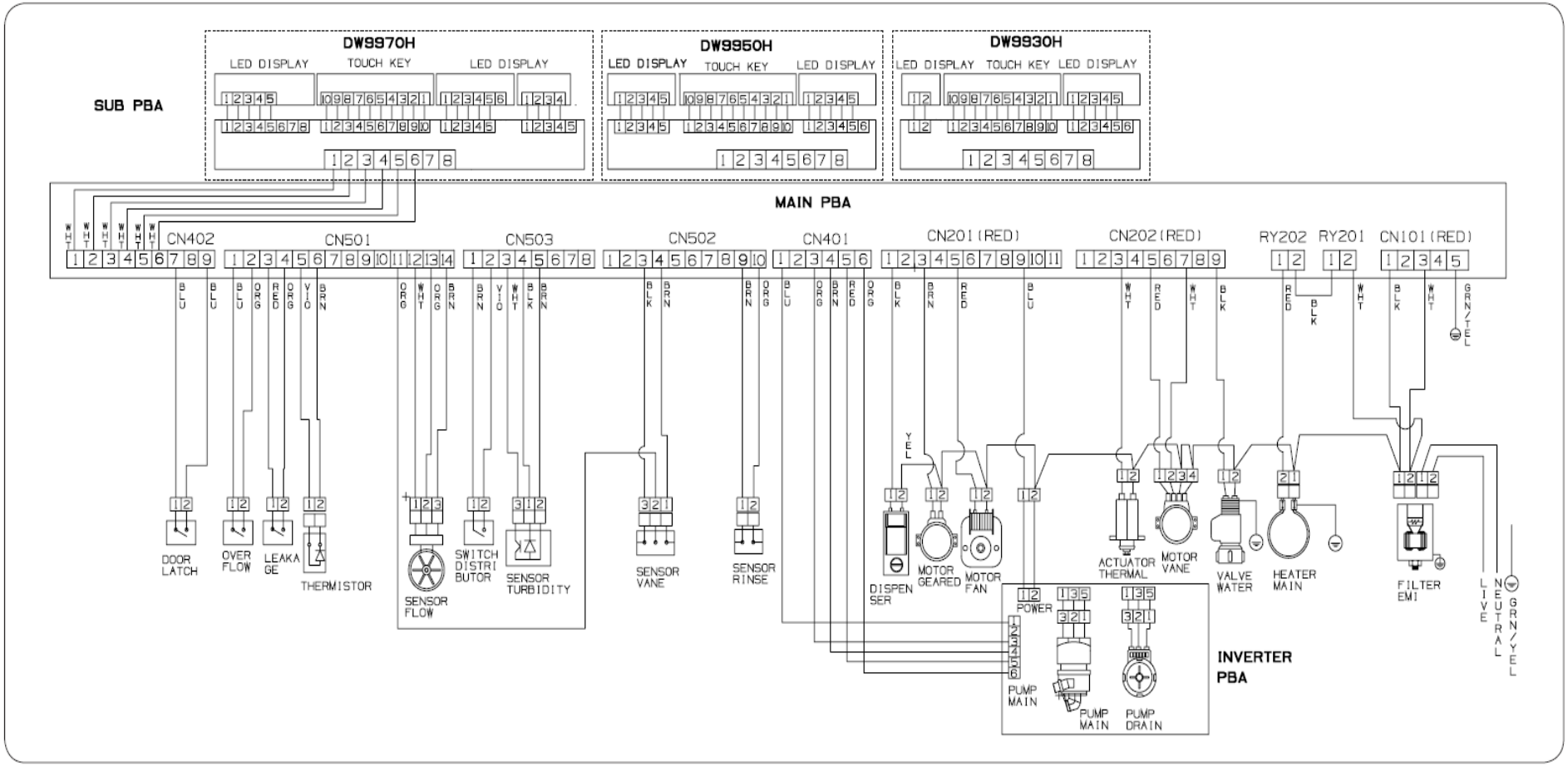
TROUBLE SHOOTING – FAULT CODES

Error Type	Error mode	Checking method	Corrective actions
Detergent is not dispensed	None	1. Check whether detergent is inserted into the dispenser.	- Check whether there is detergent in the Dispenser.
		2. Check the connections for the Dispenser connector.	- Reconnect the Dispenser connector.
		3. Check the resistance of the Dispenser.(Remove the connector before measuring.) · Normal: Approx. 0.7 ~ 3kΩ	- Faulty: Replace the Dispenser.
		4. Check the operation of the Dispenser Relay : Check the operating voltage between the Black wire of the CN201 connector and the Black wire of the CN101 connector. · Normal: 110V ~ 120V (while operating)	- Faulty: Replace the Main PBA assy.
No washing	None	1. Check the filter	- Faulty: Replace filter
		2. Check Rotors and ducts and vane	- Faulty: Replace Rotors and ducts
		3. Check the operation of the half load.	- See "PE Error".

Inverter Board (Circulation Pump & Drain Pump) Test Points



Main Board Test Points



Wiring Diagram & Component Description